

An Annotated List of New Seasonal and County Records for Ohio Dragonflies (Odonata)¹

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Abstract. This report is a contribution to the Ohio Dragonfly Survey. It includes 147 new county records involving 40 Ohio counties plus 17 new seasonal records together with notes on the ecology and behavior of selected species. These records and observations are based upon specimens collected in 50 Ohio counties during the period May through October, 1991 and 1992.

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INTRODUCTION

The Ohio Dragonfly Survey was organized in 1990 in an attempt to establish a data base dealing with the distribution and relative abundance of the dragonflies and damselflies of Ohio. The following data are a contribution to the geographic and seasonal distribution of 53 species of the 155 Odonata reported as occurring in Ohio. Notes on the ecology and behavior of selected species are included. The records reported here are the result of two seasons of collections made in the southern counties of Ohio. As a result of the timing of opportunities to work in the field and the peculiarities of the weather, the number of days of field work differed for each year.

The collecting season of 1991 extended from 14 May to 15 October and involved 47 days when field work was done. This season was noted for its many periods of hot and dry weather. Data from the office of the United States Department of Agriculture Statistician, Columbus, OH, indicated that the 1991 collecting season, in the region collected, started with temperatures in May being +4° C above normal. The months of June, July, and August all averaged above normal temperatures (U.S.D.A. 1991-92). During these months many of the smaller bodies of standing water were reduced in size, or even became dry. This seemed to have had a marked effect on the number of adult Odonata. Reduced size of aquatic habitats meant that the surviving larval stages were more exposed to fish predation and the receding shallows carried the shoreline beyond the growth of the emergent vegetation. Reduced vegetation meant the loss of shelter and the lack of support for the larvae during emergence. Also, the very warm weather seemed to cause a shortening of the life spans of the adults of most species. As the summer progressed the populations of adults appeared much lower.

The summer of 1992 provided opportunities for 72 days of collecting, but many days were less than ideal because of the cool weather. This season commenced with the month of May recording an average of -1.47° C below normal. This was followed with June registering an average of -2.22° C below normal and July -0.33° C below normal. The weekly weather reports for August in Ohio commented on the cool weather, with weekly mean

temperatures averaging only 12.2° C to 22.7° C. Precipitation was near or slightly below normal in May and June, but July and August were dominated by wet, cloudy, and windy weather. The activity of dragonflies and damselflies is greatly reduced by these latter conditions.

MATERIALS AND METHODS

A 43 cm diameter net mounted on a 1.8 m pole was used for collecting. Specimens were asphyxiated in numbered "olive bottles" containing ethyl acetate soaked in a plaster plug and on torn tissue. Each day's collection was identified at the close of the day and the specimens placed in 9 x 7 cm cellophane bags to each of which was stapled a 7.6 x 12.7 cm note paper containing the name and other relevant data. These data were also logged in a notebook of county distribution lists. At the close of each collecting trip the specimens were stored in Schmidt boxes containing fumigant. During the winter months all data were logged on standardized 27.9 x 35.6 cm sheets and were then entered into the computer data base by Robert Glotzhofer, Coordinator of the Ohio Dragonfly Survey. Field identifications were done utilizing a dissecting microscope and taxonomic materials listed in the Literature Cited (Needham and Heywood 1929; Needham and Westfall 1955; Walker 1953, 1958). Selected specimens, those representative of the fauna of Licking County and the Denison University Biological Reserve, were mounted on pins for inclusion in the Denison University Synoptic Collection. All others are to be transferred to standardized 8 x 14.5 cm plastic envelopes each with its data on a 8 x 12.5 cm card.

RESULTS AND DISCUSSION

The specimens included in this report are primarily found at lentic sites ranging from small water-filled depressions to the larger lakes. Most of the collection sites were in public access areas such as parks, public hunting and fishing areas, fish hatcheries and, with appropriate permission, protected natural areas and preserves. Such areas were chosen because of their ready accessibility and lessened likelihood of contamination by agricultural chemicals. In most instances collecting at privately-owned sites requires that permission be obtained. This often consumes time that is better spent collecting.

Lotic habitats present a number of problems. The most significant is accessibility. Ohio's riparian law means that

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the banks of all streams are in private ownership, unless the water flows through parks or government-owned forests. Lotic habitats are also often less accessible because of high banks or rapid flow. Behavior of stream species makes it difficult for a person working alone to be effective. Collecting stream species is better accomplished if several people work together.

The collecting seasons are obviously determined by the weather and the ecology of the species. The starting dates were 14 May in 1991 and 1 May in 1992. Odonate activity decreases in the fall with only a few species being active into October. During this approximately five month period seasonal weather conditions have a major effect on the activity of dragonflies and damselflies. Morning flight time is somewhat dependant upon overnight temperature, but usually does not become extensive before approximately 10:00 a.m. (E.D.T.). Depending upon the species, activity in the afternoon declines, terminating by early dusk. Another factor strongly effecting activity is the brightness of light. Most species become inactive in cloudy weather. Even a large cloud passing over will reduce the activity of some species. A few dragonflies, however, become more active in the late afternoon or at dusk, and one species, *Boyeria vinosa*, may be seen flying at night near lights or into lighted rooms.

Records from the 1991 and 1992 collecting seasons established 147 new county records from 40 of the 50 counties in which collecting was done. The following new records represent 53 species of the 155 Odonata reported from Ohio (Glotzhober 1991). In addition, 17 new seasonal records were established. The species reported here bear the scientific names established by Glotzhober (1991) and are numbered and arranged according to the system he developed.

NEW SEASONAL AND COUNTY RECORDS FOR ODONATA IN OHIO

- 42 *Gomphus vastus* Walsh; **Ross.**
- 51 *Gomphus lividus* Selys; **Athens, Union, Wyandot.**
- 58 *Gomphus exilis* Selys; **Athens, Coshocton, Morgan, Pike, Ross, Washington.**
- 74 *Dromogomphus spoliatus* Selys; **Preble.**
- 76 *Stylogomphus albistylus* (Hagen); **Licking.** This specimen was found dead beneath a picture window in Granville on the morning following a severe thunderstorm. This species is reported from rocky, spring-fed woodland streams. Such habitats occur in Granville Township but not within the village. Likely this specimen was blown in by the storm.
- 80 *Basiaeschna janata* (Say); **Belmont, Monroe, Morgan, Noble, Washington.**
- 83 *Anax longipes* Hagen; **Licking.** Although widespread, this very elusive species has been reported collected in only six counties.
- 85 *Anax junius* (Drury); **Brown, Darke, Montgomery, Scioto, Seneca, Washington.** In contrast to the previous species, the "Green Darner" is probably common in every county of Ohio. It is unreported from only six counties. Feeding swarms were seen on 17 September 1991 and 25 September 1992 (Alrutz 1993).

- 101 *Aeschna constricta* Say; **Madison.** Males of this species were taken at the London Fish Hatchery where they were cruising along the bank vegetation of the canals, not the ponds. They were taken in the morning and seemed to hang up in this vegetation at night.
- 123 *Macromia taeniolata* Rambur; **Morrow.** This record from Amaan Reservoir in Washington Township, Morrow County, on 15 September 1992, is a new late collection date for Ohio.
- 125 *Macromia pacifica* Hagen; **Miami.** The records from the Stillwater River at Covington in Newberry Township, Miami County, on 16 July 1991, are the earliest Ohio collection date.
- 130 *Didymops transversa* (Say); **Monroe, Washington.** The Washington County collection, made on 21 August 1992, extends the flight season.
- 136 *Epitheca princeps* Hagen; **Coshocton, Fayette, Hardin, Pickaway, Union, Wood, Wyandot.** This active "cruiser" is often the first species active in the morning and the last seen feeding in the fading light at dusk. The reported distribution does not adequately reflect the fact that this is a widely distributed, difficult to capture, species.
- 138 *Epitheca cynosura* (Say); **Athens, Highland, Meigs, Noble, Pike, Washington.**
- 171 *Nannothemis bella* (Uhler); This species was not collected in 1992. Borror (1930) reported *N. bella* from Cedar Swamp in Champaign County, and Alrutz (1961) reported it from Silver Lake in Miami County. This site was again visited on 4 August 1992. The previous record had been on 10 July 1960, but the 1992 weather patterns precluded much collecting in the later weeks of July. The habitat description given by Alrutz (1961) of low grasses growing in a thin film of water flowing from a hillside is no longer applicable as the site has radically changed. This may be resulting from the recent series of dry summers in Ohio. This population has possibly been extirpated as several hours spent at the site failed to yield any adults.
- 172D *Perithemis tenera* (Say); **Montgomery, Tuscarawas, Washington.** A specimen collected on 25 September 1992 at Lake Logan in Hocking County extends the season for this species. These records also bring to 88 the number of counties in which it has been collected.

Genus *Celithemis*—The following two species are quite local in their distribution, with *C. elisa* being reported from more counties. During the summer of 1992 at Licking County Park, Union Township, these two species occurred in tremendous numbers from early summer until their being the last species seen in the fall.

- 173 *Celithemis eponina* (Drury); **Coshocton, Darke, Preble, Vinton, Washington.** A specimen taken at County Park in Licking County on 8 October 1992 extends the flight season for this species.
- 174 *Celithemis elisa* (Hagen); **Coshocton, Fayette, Madison, Montgomery, Pike, Preble, Wyandot.** This species was collected on 26 September 1992 at the Licking County Park in Union Township.

- 190 *Libellula luctuosa* Burmeister; **Madison**. This ubiquitous species has now been reported from every Ohio county.
- 196 *Libellula cyanea* Fabricius; **Brown, Morgan, Washington**. Specimens of this species taken at Clouse Lake in Reading Township of Perry County on 28 May 1991 set a new early seasonal date. On 8 June 1992, in the Indian Creek Wildlife Area, Perry Township, Brown County, adults and exuviae of this species were taken at a roadside "rut" made by a tractor mower. The rut was filled with water and exuviae were found on emergent vegetation indicating that adults had emerged from this small body of water.
- 198 *Libellula semifasciata* Burmeister; **Montgomery**.
- 199 *Libellula pulchella* Drury; **Madison, Montgomery, Preble, Washington**. A specimen taken at a small pond in the Killdeer Plains Wildlife Area, Marseilles Township, Wyandot County, on 15 September 1992, establishes a new late record for the species. It probably occurs in every county for it is unreported from only three.
- 204 *Libellula incesta* Hagen; **Adams, Jackson, Scioto, Vinton**. Specimens of this species were taken on 11 September 1992 at Lake Alma in Vinton County, a new late record. In some habitats this species can be very wary and difficult to capture.
- 207 *Libellula lydia* Drury; **Clark, Seneca, Washington**. This species is probably statewide in distribution. It is more common in small fish-free habitats.
- 214 *Sympetrum ambiguum* (Rambur); **Preble, Vinton**.

The following two species of the genus *Sympetrum* are the most commonly reported from Ohio.

- 217 *Sympetrum rubicundulum* (Say); **Washington**.
- 220 *Sympetrum vicinum* (Hagen); **Allen, Guernsey, Muskingum, Scioto, Wyandot**.
- 225 *Leucorrhinia intacta* (Hagen); **Montgomery, Morgan**.
- 230 *Pachydiplax longipennis* (Burmeister); **Adams, Darke**. A female of this species was taken at the Morris Woods Natural Area, Liberty Township, Licking County, on 19 September 1991. This is an extension of the reported season of this common pond species, unreported from only two counties.
- 231 *Erythemis simplicicollis* (Say); **Tuscarawas, Wood**. The distribution of this species parallels that of the previous one but it is active later in the year, the record being October 8th (Borror and Epstein 1942).

The two species of the genus *Pantala* are under-reported for Ohio because of their habits and habitat selection. The larval stages are in muddy, relatively unvegetated pools that are fish-free. The adults feed in the open and therefore are very difficult to net. They are seen at the larval sites only briefly.

- 238 *Pantala hymeneae* (Say); **Licking**.
- 239 *Pantala flavescens* (Fabricius); **Fairfield**.
- 242 *Tramea lacerata* Hagen; **Coshocton, Montgomery, Ross, Seneca**. This large common species has been reported from all but 17 of Ohio's 88

counties and is probably ubiquitous. The reported seasonal distribution extends from 6 May until 11 October. In the late summer of 1992 it appeared to suffer a population drop in central Ohio. Individuals were taken, or sighted, rather commonly from 3 June through July and until the first week in August. During the remainder of the season, extending until 8 October, collections were made on 31 days, but only once was *T. lacerata* observed. On 17 September in Washington Township, Coshoc-ton County, four teneral specimens were netted and two other tenerals were seen, apparently all part of an emergence on the previous night.

- 243 *Tramea onusta* Hagen; **Licking**. This is one of the two red species of *Tramea* reported from Ohio. They are extremely wary, cruising offshore and thus very difficult to capture.
- 251 *Calopteryx maculatum* (Beauvais); **Athens, Washington**. Specimens taken on 15 May at Monroe Lake, Malaga Township, in Monroe County, represent an early record.
- 254 *Hetaerina americana* (Fabricius); **Coshocton, Morgan**.
- 265 *Lestes forcipatus* Rambur; **Licking**.
- 268 *Lestes dryas* Kirby; Numerous pairs of this species were seen ovipositing in dead twigs emerging from the shallow water of Abbott's Pond in the Morris Woods Natural Area, Liberty Township, Licking County, on 1 May 1992. This is the earliest reported date.
- 270 *Lestes vigilax* Hagen; **Licking, Montgomery**.
- 277 *Argia apicalis* (Say); **Brown, Hardin, Washington**.
- 280A *Argia fumipennis violacea* (Hagen); **Brown, Washington**.
- 284 *Argia moesta* (Hagen); **Pike**.
- 286 *Argia sedula* (Hagen); **Clinton, Coshocton, Washington**.
- 288 *Argia tibialis* (Rambur); **Miami**.
- 290 *Argia translata* Hagen; **Coshocton, Fairfield, Hardin, Washington**. The Washington County specimen was taken at the Veto Lake Wildlife Area, Durham Township, on 10 September 1992. This is a new late record.
- 301 *Chromagrion conditum* Hagen; **Monroe, Morgan**.
- 306 *Enallagma divagans* Selys; **Washington**. The Veto Lake Wildlife Area, Durham Township, Washington County, yielded specimens of this species on 21 May 1992, the earliest reported date.
- 314 *Enallagma geminatum* Kellicott; **Brown, Coshocton, Meigs, Pike, Scioto, Washington, Wyandot**.

Of the damselflies in the genus *Enallagma*, there are three common pond species, *E. signatum*, *E. exsulans*, and *E. civile*. One other, *E. basidens*, was first reported in Ohio by Borror (1937) and will probably be found in every county.

- 321 *Enallagma signatum* (Hagen); **Adams, Athens, Noble, Scioto, Vinton**.
- 322 *Enallagma vesperum* Calvert; **Pike**.

- 327 *Enallagma exsulans* (Hagen); **Washington.** This species was taken at the Veto Lake Wildlife Area of Washington County on 10 September 1992, extending the reported season.
- 333 *Enallagma civile* (Hagen); Specimens of this species were taken on 18 October in the County Park in Union Township, Licking County, setting a new late record.
- 338 *Enallagma basidens* Calvert; **Knox, Madison, Vinton, Washington, Wayne, Wyandot.** Specimens of this species were collected at the Horse Creek Campground of the Ohio Power Recreation Area, Bristol Township, Morgan County, on 16 May 1992, setting a new early record. Collections made on 5 October at the County Park in Union Township, Licking County, establish a new late record.
- 339 *Enallagma aspersum* (Hagen); **Clark, Coshocton, Hardin, Preble, Seneca, Union, Wyandot.**
- 349 *Ischnura posita* (Hagen); **Clermont, Washington.**

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